

VitiBox Cloud (Software) Setup

Introduction

1. Prepare your Raspberry Pi OS

<https://www.raspberrypi.com/software/>

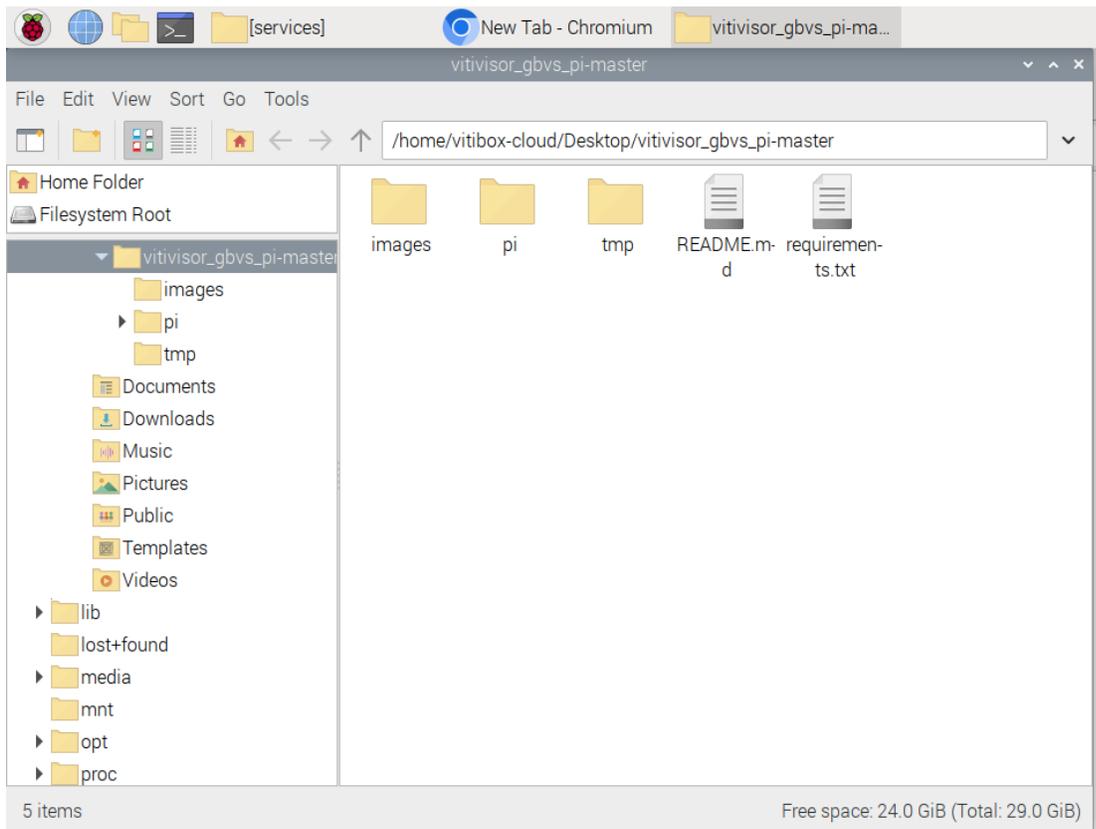
Hardware

- Raspberry Pi 4 Model B 8GB × 1
- MicroSD card with Raspberry OS × 1 (32GB minimum)
- MicroSD card Reader × 1
- Raspberry Pi 4 Power Supply × 1
- USB Keyboard and Mouse Set × 1
- Computer Screen × 1

VitiBox Cloud (Software) Setup Guide

1. Prepare Raspberry Pi OS on the MicroSD card using your computer
2. Insert the MicroSD card into your Raspberry Pi and connect the keyboard, mouse, and computer screen accordingly.
3. Power the Raspberry Pi and follow the instruction to configure your Raspberry Pi. You must name your Raspberry Pi as 'vitibox-cloud' because the current code cannot recognize the directory structure automatically.
4. Run the following command in a terminal window to install the latest updates
 - `sudo apt-get update`
 - `sudo apt-get upgrade`
5. Reboot your Raspberry Pi after the completion
6. Check your Python 3 version using the command 'python3 – version'. Your Python version should be higher than 3.7.x. This document was prepared on 18 June 18, 2022, and the Raspberry Pi OS was created under Windows 11 using the software listed in the 'Introduction' section. The Python version was 3.9.3.
7. Run the command 'sudo raspi-config' and navigate to Interface Options and select Legacy camera to enable it.
8. Navigate to Performance Option and select GPU Memory, change the amount of memory made available to the GPU to 256MB. Reboot your Raspberry Pi.
9. Run the following command to install the dependencies for VitiBox Cloud.
 - `sudo apt install qtbase5-dev qtchooser qt5-qmake qtbase5-dev-tools`
 - `sudo pip install gpsd-py3`
 - `sudo pip install requests`
 - `sudo apt-get install python3-pyqt5`
 - `sudo pip install -U picamerax`
10. Reboot your Raspberry Pi.
11. Download and unzip the code to the desktop directory. The directory on your Raspberry Pi must be the same as the one below:

`/home/vitibox-cloud/Desktop/vitivisor_gbvs_pi-master/`



12. Create a shortcut on the desktop to run the VitiBox Cloud software
 - Create a new file on the desktop using a right-click
 - Copy the following codes into your new file with an extension of '.desktop'

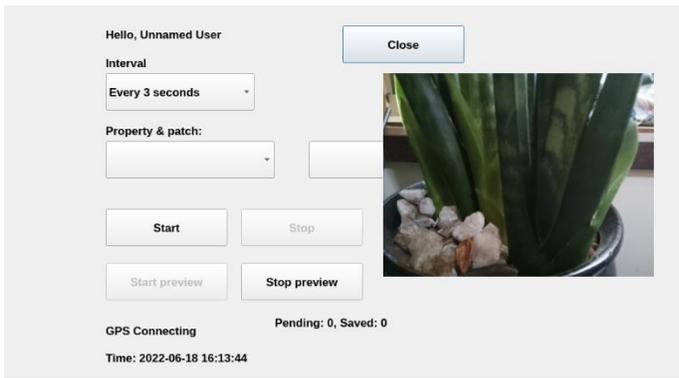
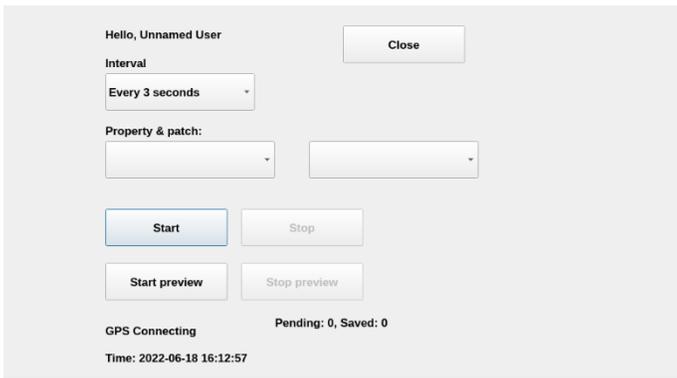
```
[Desktop Entry]
Name=GBVS
Comment=GBVS
Exec=sudo python3 /home/vitibox-cloud/Desktop/vitivisor_gbvs_pi/pi/main.py
Type=Application
Encoding=UTF-8
```

12. Run the VitiBox Cloud software using the command line in a terminal window

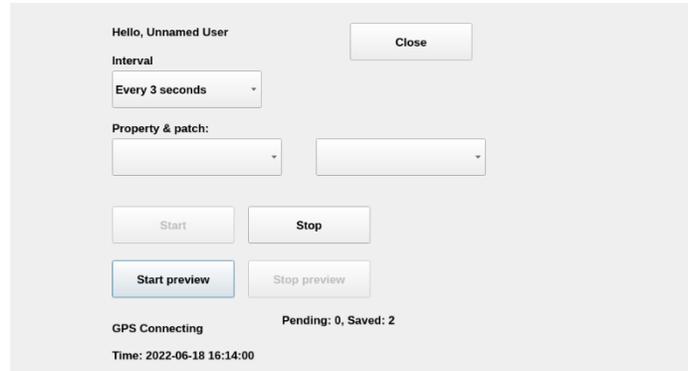
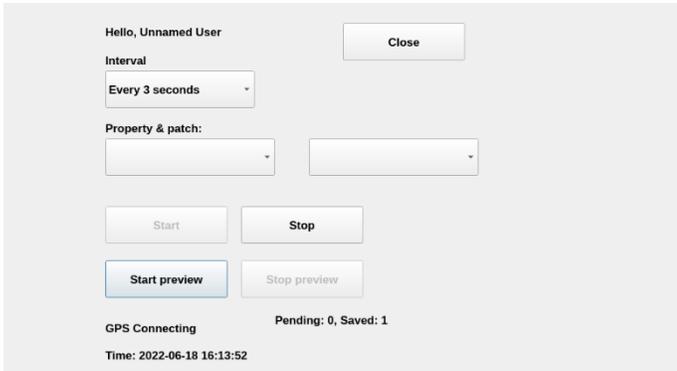
```
cd /home/vitibox-cloud/Desktop/vitivisor_gbvs_pi/pi && sudo python3 main.py
```

Using the VitiBox Cloud software*

1. Double click the GBVS shortcut on your desktop and click the 'Execute' button.
2. Select your interval for image capturing. The default interval is 3 seconds.
3. Click the 'Start preview' button, you will see the image captured by the camera. You can use the preview window as an aid to adjust the angle of the camera.
4. Click the 'Stop preview' button when you complete the adjustment.



5. Click the 'Start' button to capture images. The number of images collected will be updated in real-time.



6. Click the 'Stop' button to stop or pause the capturing function.

* Some functions are not available at this stage. These functions may become available after the Cloud server, the online image processing sub-system, and dashboard is ready. At this stage, all images captured will be saved locally.